

Application No.: 10/815,983
Filing Date: April 1, 2004

REMARKS

Upon entry of the foregoing amendments, Claims 1 and 4-13 and 15-24 remain pending in the above-captioned application. Claims 2, 3 and 14 have been canceled without prejudice and Applicants reserve the right to pursue the subject matter of these claims in a continuation application. Claims 17-24 are currently withdrawn.

Rejection of the Claims Under 35 U.S.C. § 112

Claim 5 stands rejected under 35 U.S.C. § 112, ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner notes that "Claim 5 recites the limitation 'the inlet tube'," and that there is insufficient antecedent basis for this limitation in the claim.

Applicants have amended Claim 5 to recite "the inlet" instead of "the inlet tube." Accordingly, Applicants respectfully submit that Claim 5 is definite and respectfully requests the withdrawal of the rejection of Claim 5 under 35 U.S.C. § 112.

Rejection of the Claims Under 35 U.S.C. § 103

Claims 1, 4-8 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Doherty et al. (US 5,441,071).

Claims 9-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Doherty et al. in view of Skogley (US 5,355,736).

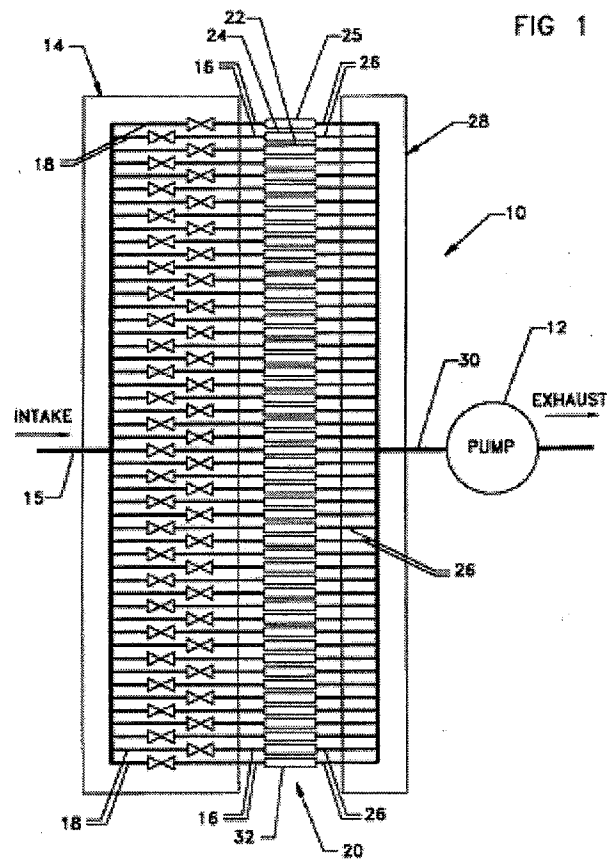
Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Doherty et al. in view of Mereish et al. (US 6,306,350).

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Doherty et al. in view of Weisgerber (US 3,921,178)

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Doherty et al. in view of Ogawa (US 4,527,968).

Applicants respectfully traverse all of these rejections.

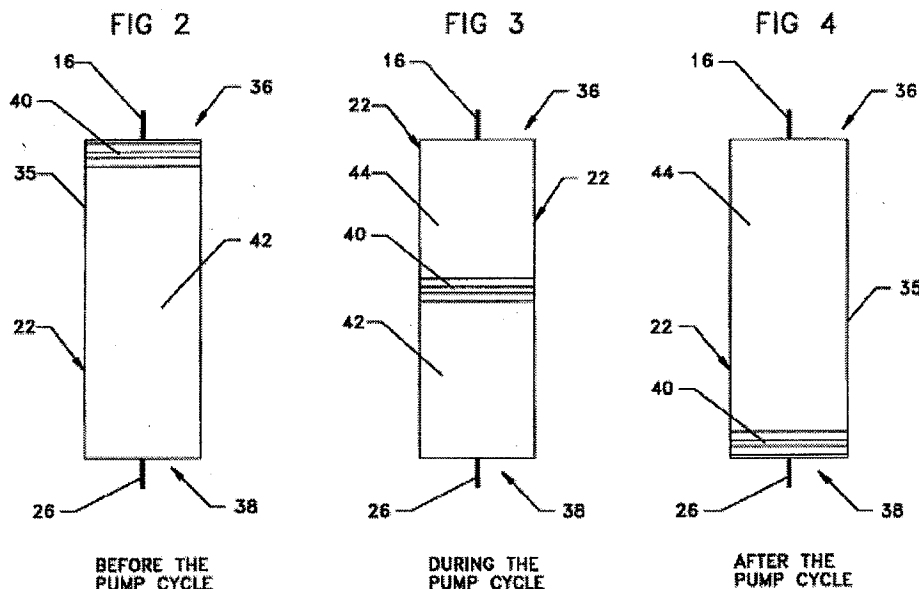
Doherty discloses an automated water sample collecting system that includes a single inlet line 15 and a multiport valve 14, which includes a plurality of ports 16 and corresponding port inlets 18. The multiport valve 14 is coupled to a bank 20 of water sample containers 22. See Doherty at col. 5, lines 26-55; Figure 1 (reproduced below).



The containers 22 are coupled at their downstream end to respective manifold outlets 26 of an output manifold 28, which couple to a single pumping water output line 30. A pump 12 is coupled to the water outlet line 30. See Doherty, col. 5 at line 56 – col. 6, line 2. “The sample water container 22 is also fitted on the inside with a slidable sealing piston 40 contained within the cylindrical container 35 and slidable between the ends 36, 38. The piston slides between the ends of the elongate sample water container 22 in response to differential pressure across the piston 40.” Doherty, col. 6 at lines 37-42; Figures 2-4 (reproduced below).

In the initial position of the piston 40 (FIG. 2), the sample water container 22 is backfilled with pumping water 42 from the pumping water opening end 38, which pushes the piston 40 against the sample water opening end 36. See Doherty, col. 6 at lines 43-50; Figure 2. When sample water is to be collected in a particular water container 22, the multiport valve 14 opens the respective port inlet 18 and port 16 and the pump 12 draws pumping water 42 from the backfilled side of the water sample container 22 through the pumping water opening end 38 and manifold outlet 26. See Doherty, col. 6 at lines 51-66. The differential pressure across the piston 40 causes the piston 40 to slide from the sample water opening end 36 to the pumping water

opening end 38 drawing sample water 44 into the sample water container 22. See id.; Figures 3 and 4.



However, Doherty does not teach or suggest, among other things, an active sampler for liquids comprising “an inlet, an outlet, and a sampling unit positioned between said inlet and outlet, said sampling unit comprising a plurality of sampling chambers which are substantially fluidly sealed relative to one another, one of the chambers being positioned in a flow path that extends from the inlet, through the sampling unit, to the outlet,” as recited among other features in Claim 1. Instead, as noted above, Doherty discloses a slidable sealing piston 40 within the sampling container 22 that slides between the ends of the sampling container 22 based on a differential pressure across the piston. Therefore, the piston 40 does not allow flow through the sampling container 22. As such, Doherty does not teach or suggest, among other things, an active liquid sampler with a sampling unit between an inlet and an outlet, where one of the sampling chambers in the sampling unit is positioned in a flow path that extends from the inlet, through the sampling unit, to the outlet. Though Doherty discloses that the sample containers can be “syringes, elongate cylindrical sample collecting tubes, flexible bags,” Applicants respectfully submit that these embodiments would either utilize the piston configuration disclosed above or include a closed end so as to be able to hold the sample in the sample container, and therefore would likewise not provide a sampling unit between an inlet and an outlet, where one of the sampling chambers in the sampling unit is positioned in a flow path that

extends from the inlet, through the sampling unit, to the outlet. Additionally, Doherty does not disclose, teach or suggest, among other things, that “the sampling chambers contain a sampling media,” as recited among other features in Claim 1. In fact, there is no discussion in Doherty of including a sampling media in the sampling container 22 that may absorb or adsorb a sample from the flow of sample fluid.

Moreover, Applicants respectfully submit that Doherty teaches away from an active liquid sampler with a sampling unit positioned between an inlet and an outlet, where one of the sampling chambers in the sampling unit is positioned in a flow path that extends from the inlet, through the sampling unit, to the outlet, as claimed, among other features, in Claim 1. By teaching the use of a slidable sealing piston 40, Doherty teaches away from a sampling system where a sampling chamber is placed in a flow path that extends from an inlet, through the sampling chamber, to the outlet. Moreover, the method disclosed in Doherty for operating the sample collecting system (see col. 6, lines 43-66) teaches away from positioning a sampling chamber in a flow path that extends from the inlet, through the sampling chamber, to the outlet. As disclosed in Doherty, flow is drawn into the sampling container 22 by operating the pump 12 to draw water 42 from the backfilled side of the sample container 22, which causes a differential pressure across the piston 40 that causes the piston 40 to slide from the sample water opening end 36 to the pumping water opening end 38, thereby drawing sample water 44 into the sample container 22. As noted by the Supreme Court’s decision in *KSR Int’l. v. Teleflex, Inc.*, a finding of nonobviousness is more likely when the prior art references teach away from a combination of elements. *See KSR Int’l. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740 (2007).

The Examiner states that “with respect to the battery, Doherty discloses that the apparatus is configured for sampling water at remote locations,” and that in light of this it would have been obvious to one of ordinary skill in the art to provide the apparatus with a battery. The Examiner also states that “[w]ith respect to the power consumption, although Doherty does not disclose the power consumption of the apparatus, it would have been obvious to one of ordinary skill in the art to use a low-powered pump and minimize friction between moving parts of the apparatus to minimize power consumption such that the apparatus only consumes 250 mW of power.” Applicants disagree that one of ordinary skill in the art would have taken the sample collecting system in Doherty and modified it to use a low-powered pump that consumes only 250 mW of

power. The sampling unit in Doherty has many sealing surfaces (e.g. slidable sealing pistons), as well as the pump and the rotating multiport valve 14, all of which would consume a lot of energy to operate. Therefore, there is no suggestion in Doherty of using a low-power pump that consumes only 250 mW of power, and the construction of the sampling unit in Doherty in fact teaches away from using a low-powered pump that consumes only 250 mW of power.

Accordingly, in view of the above, Applicants respectfully submit that Claim 1 is allowable over Doherty.

Claims 4-13, 15 and 16 depend from Doherty and are therefore likewise allowable over Doherty, alone or in combination with the cited references, not only because they depend from an allowable base claim but also because each of these claims recites a unique combination of features not taught or suggested by the cited art. For example, Claim 8 further recites that "the plurality of sampling chambers are substantially fluidly sealed relative to one another by O-rings disposed at the ends of each chamber," which Applicants respectfully submit is not taught or suggested by Doherty. Though the Examiner points to col. 8, lines 59-60 in Doherty as teaching this feature, this passage in Doherty only states that "[v]arious seals throughout the multiport valve are provided by the use of O-ring seals 78 at various locations." Such O-ring seals are shown in FIG. 5 of Doherty as between the motor housing 80 and the valve body 52, and between the motor housing 80 and oil diaphragm 82. However, nowhere does Doherty disclose, teach or suggest the use of O-rings to substantially fluidly seal the plurality of sampling chambers relative to one another, the O-rings disposed at the ends of each chamber. In fact Doherty teaches away from the use of O-rings to substantially fluidly seal a plurality of sampling chambers relative to each other by teaching, in col. 8, lines 40-43, that "[t]he relatively softer and relatively harder flat bearing surfaces 60, 62 provide a good seal between the bearing surfaces, sealing off the unused ports 16 of the multiport valve head."

Additionally, Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness for Claims 9-11, 13, 13 and 15 because, as discussed above, Doherty does not teach, and in fact teaches away from, among other things, a sampling unit with a sampling chamber that is positioned in a flow path that extends from an inlet, through the sampling unit, to the outlet. Additionally, as noted above, Doherty does not teach or suggest using a sampling media in the sampling chambers to collect a sample. In fact, the sampling unit

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disclosed in Doherty teaches away from using a sampling media as the actuation of the sliding piston 40 in the sampling container 22 would push any sampling media out of the sampling container 22, thus preventing the sampling media from remaining in the sampling container. Accordingly, Applicants respectfully submit that Doherty teaches away from a combination with Skogley.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance. Accordingly, an early issuance of a notice of allowance is requested.

Any remarks in support of patentability of one claim should not be imputed to any other claim, even if similar terminology is used. Any remarks referring to only a portion of a claim should not be understood to base patentability on that portion or that the limitation discussed is essential or critical; rather, patentability must rest on each claim taken as a whole. Applicants respectfully traverse each of the Examiner's rejections and each of the Examiner's assertions regarding what the prior art shows or teaches, even if not expressly discussed herein. Applicants may not have presented in all cases, arguments concerning whether the applied references can be properly combined or modified in view of the deficiencies noted above, and Applicants reserve the right to later contest whether a proper reason exists to combine the references or to present evidence of secondary indicia of nonobviousness.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issue promptly.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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